4. Certain phenomena of precipitin reactions, including precipitation, inactivation, inhibition, and solution of precipitates, appear to be incompatible with the commonly accepted statement of Ehrlich's theory of the substances concerned in precipitin interactions.

Miadesmia membranacea, *Bertrand; a New Palæozoic Lycopod with a Seed-like Structure.*

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(Communicated by Dr. D. H. Scott, F.R.S. Received April 26,—Read June 13, 1907.)

(Abstract.)

The vegetative organs of this interesting new type were discovered by Bertrand in 1894. He found them in sections of a calcite nodule from the Gannister beds of Hough Hill, England. A large quantity of new material has become available, and now not only are more details known as to the vegetative organs, but a fairly complete knowledge of the reproductive organs is possible.

Miadesmia was exceedingly minute, its stem slender and without any trace of skeletal tissue. It is the first Palæozoic Lycopod of herbaceous character known structurally. The megasporophylls which were identified by Dr. D. H. Scott, F.R.S., in 1901, show a more advanced type of seed habit than has hitherto been met with in Cryptogams. The megasporange gives rise to but one thin-walled spore, which in development and structure resembles an embryo sac and germinates *in situ*. An integument surrounds the sporange, leaving but a small orifice as micropyle. This is surrounded by numerous long processes of the integument, which formed a collecting and incubating apparatus for the microspores. There is no trace of an envelope about the microsporange. The carpellary leaf was shed at maturity, and resembles a winged seed.

Disregarding the structural modifications of the megasporophyll, the nearest affinity of Miadesmia among forms so far known seems to be with the non-specialised species of Selaginella, such as *Selaginella selaginoides*, but the foliage leaves show the archaic leaf-base comparable with that of Lepidodendreæ.